

Appl. No. 09/685,183
Am dt. dated June 1, 2004
Reply to Office Action of March 3, 2004
Page 2

IN THE CLAIMS:

1. – 56. (Canceled)

57. (Previously presented) A catheter for mapping and/or ablation of tissue, comprising:

an elongated catheter body including a proximal section and a distal section, the distal section including a curvable proximal segment, a bendable intermediate segment and a distal segment;

a proximal insulator facilitating a junction between a portion of the proximal segment of the distal section and a portion of the intermediate segment of the distal section;

a distal insulator facilitating a junction between another portion of the intermediate segment of the distal section and a portion of the distal segment of the distal section;

a first deflection member adapted to deflect the distal segment through the proximal segment, extending through the proximal section and the distal section and including a distal portion coupled to the distal insulator; and

a second deflection member adapted to deflect the proximal segment, extending through the proximal section and the distal section and including a distal portion coupled to the proximal insulator.

58. (Previously presented) The catheter of claim 57, wherein:

the proximal segment of the distal section includes a first multi-lumen tube, the first tube including a first lumen through which the first deflection member passes and a second lumen through which the second deflection member passes;

the intermediate segment of the distal section includes a second multi-lumen tube, the second tube including a lumen through which the first deflection member passes; and

Appl. No. 09/685,193
Amtd. dated June 1, 2004
Reply to Office Action of March 3, 2004
Page 3

the second multi-lumen tube has a durometer which is relatively soft compared to the first multi-lumen tube.

59. (Previously presented) The catheter of claim 57, wherein the first deflection member and the second deflection member each further include a lubricious coating formed thereover.

60. (Previously presented) The catheter of claim 57, wherein the first deflection member advances the intermediated section in a bending radius between approximately 2.0 mm and 7.0 mm.

61. (Previously presented) The catheter of claim 57, wherein the deflection of the first deflection member is independent of the deflection of the second deflection member.

62. (Previously presented) The catheter of claim 57, wherein a catheter body axis extends centrally through the catheter body from the proximal section to the distal section, and the first deflection member deflects the distal segment through a first angle relative to the catheter body axis and the second deflection member deflects the proximal segment through a second angle relative to the catheter body axis, and wherein the first angle is between approximately zero and 180 degrees and the second angle is between approximately minus 90 degrees and 270 degrees relative to the catheter body axis.

63. (Previously presented) The catheter of claim 57, further comprising an incompressible spiral wire tube formed about the first deflection member and extending through the proximal section and the distal section; wherein a distal end of the incompressible tube is fixedly engaged to the proximal insulator and a proximal end of the tube freely floats within the proximal section of the catheter body.

Appl. No. 09/685,193
Amdt. dated June 1, 2004
Reply to Office Action of March 3, 2004
Page 4

64. (Previously presented) The catheter of claim 57, wherein the first deflection member further includes an enlarged ball tip terminating the distal portion and the ball tip fits in a bore of the distal insulator.

65. (Previously presented) The catheter of claim 57, wherein the distal portion of the second deflection member includes a bent portion formed over a distal surface of the proximal insulator.

66. (Previously presented) The catheter of claim 57, further comprising a third deflection member adapted to rotate the distal section, extending through the proximal section and the distal section and including a distal portion coupled to the proximal insulator.

67. (Previously presented) A catheter for mapping and/or ablation of tissue, comprising:

an elongated catheter body including a proximal section and a distal section, the distal section including a bendable first segment and an extended distal segment, the extended distal segment including an insulating tubular member and a one or more electrodes supported thereon;

a distal insulator facilitating a junction between a distal end of the first segment and a proximal end of the extended distal segment; and

a deflection member adapted to deflect the first segment, extending through the proximal section and the distal section and including a distal end coupled to the distal insulator;

wherein the insulating tubular member of the extended distal segment has a relatively low durometer such that the extended distal segment is more flexible than the proximal section.

Appl. No. 09/685,193
Amdt. dated June 1, 2004
Reply to Office Action of March 3, 2004
Page 5

68. (New) A catheter for ablation and/or mapping of tissue, comprising:

- an elongated catheter body including a proximal section and a distal section, the distal section including a curvable proximal segment, a bendable intermediate segment and a distal segment;
- a first junction coupling the intermediate segment to the distal segment;
- a second junction coupling the intermediate segment to the proximal segment;
- a first deflection member adapted to deflect the distal segment through the intermediate segment, the first deflection member extending from the proximal section of the catheter body into the distal section and coupled to the distal section in proximity to the first junction; and
- a second deflection member adapted to deflect the proximal segment, the second deflection member extending from the proximal section of the catheter body into the distal section and coupled to the distal section in proximity to the second junction.

69. (New) The catheter of claim 68, wherein the first deflection member deflects the distal segment of the distal section between a first position, wherein the distal segment is axially aligned with the proximal segment of the distal section, and a second position, wherein the distal segment is substantially parallel to the proximal segment.

70. (New) The catheter of claim 68, wherein the first deflection member advances the intermediate segment in a bending radius between approximately 2.0 mm and 7.0 mm.

71. (New) The catheter of claim 68, wherein the second deflection member includes a curve deflection push-pull wire and a lateral deflection wire, a distal portion of each of the wires coupled to the distal section of the catheter body in proximity to the second junction.

Appl. No. 09/685,193
Arndt dated June 1, 2004
Reply to Office Action of March 3, 2004
Page 6

72. (New) The catheter of claim 71, wherein the lateral deflection wire is adapted to receive torque in order to rotate the distal section.

73. (New) The catheter of claim 68, wherein the deflection of the first deflection member is independent of the deflection of the second deflection member.

74. (New) The catheter of claim 68, wherein the proximal segment of the distal section comprises a multi-lumen tube and wherein the second deflection member passes through a first lumen thereof and the first deflection member passes through a second lumen thereof.

75. (New) The catheter of claim 68, wherein the intermediate segment of the distal section comprises a multi-lumen tube and wherein the first deflection member passes through a lumen thereof.

76. (New) The catheter of claim 68, further comprising:
an incompressible member formed about the second deflection member within the proximal section and the proximal segment of the distal section of the catheter body;
wherein the incompressible member is fixedly engaged at a single point, the single point coinciding with the second junction.

77. (New) The catheter of claim 68, further comprising:
an incompressible member formed about the second deflection member within the proximal section of the catheter body;
wherein the incompressible member is fixedly engaged at a single point, the single point coinciding with a distal end of the proximal section.

Appl. No. 09/685,193
Amdt. dated June 1, 2004
Reply to Office Action of March 3, 2004
Page 7

78. (New) The catheter of claim 68, wherein:

the first deflection member deflects the distal segment of the distal section through a first angle relative to an axis of the proximal section of the catheter body;

the second deflection member deflects the proximal segment of the distal section through a second angle relative to the axis; and

wherein the first angle is between approximately zero degrees and approximately 180 degrees and the second angle is between approximately minus 90 degrees and approximately 270 degrees relative to the axis.

79. (New) The catheter of claim 68, wherein the first deflection member deflects the distal segment of the distal section through an angle relative to an axis of the proximal section of the catheter body, while the proximal segment of the distal portion remains approximately aligned with the axis.

80. (New) The catheter of claim 68, wherein the first deflection member deflects the distal segment of the distal section through a first angle relative to an axis of the proximal section of the catheter body and the second deflection member deflects the proximal segment of the distal section through a second angle relative to the axis in an opposite direction to the first angle.

81. (New) The catheter of claim 68, wherein:

the proximal segment of the distal section comprises a multi-lumen tube; the second deflection member passing through a first lumen thereof and the first deflection member passing through a second lumen thereof;

the intermediate segment of the distal section comprises a multi-lumen tube; the first deflection member passing through a lumen thereof; and

the proximal segment multi-lumen tube has a higher durometer than the intermediate segment multi-lumen tube.

Appl. No. 09/885,193
Amdt. dated June 1, 2004
Reply to Office Action of March 3, 2004
Page 8

82. (New) The catheter of claim 68, wherein:

the proximal segment of the distal section comprises a multi-lumen tube;

the intermediate segment of the distal section comprises a multi-lumen tube; and

the proximal segment multi-lumen tube having more lumens than the intermediate segment multi-lumen tube.

83. (New) The catheter of claim 68, further comprising a distal insulator facilitating the first junction.

84. (New) The catheter of claim 68, further comprising a proximal insulator facilitating the second junction.

85. (New) The catheter of claim 68, wherein the first deflection member and the second deflection member each include a lubricious coating formed over a portion thereof.

86. (New) The catheter of claim 68, wherein the first deflection member includes an enlarged ball tip terminating a distal portion thereof; the ball tip facilitating coupling of the first deflection member to the distal section of the catheter body.

87. (New) The catheter of claim 83, wherein the first deflection member includes an enlarged ball tip terminating a distal portion thereof; the ball tip fitted within a bore of the distal insulator.

88. (New) The catheter of claim 84, wherein a distal portion of the second deflection member includes a bent portion formed over a distal surface of the proximal insulator.